

salvaged in late spring and early summer. Therefore, it appears that delta smelt nursery habitat was completely downstream of the influence of the pumping facilities in 1995.

On May 16, 1996, about 60 researchers and others attended a second delta smelt workshop at Contra Cost Water District headquarters. Topics included current sampling programs, delta smelt diets, reproduction, genetics, environmental tolerances, X<sub>2</sub> relationships, entrainment, culture, and toxicants. Following the talks, a panel discussed the future direction of delta smelt research. Input from this discussion session was used to plan future delta smelt research. One addition to delta smelt research in 1997 that resulted from this discussion is a pilot study to investigate delta smelt use of shallow water habitat in the estuary.

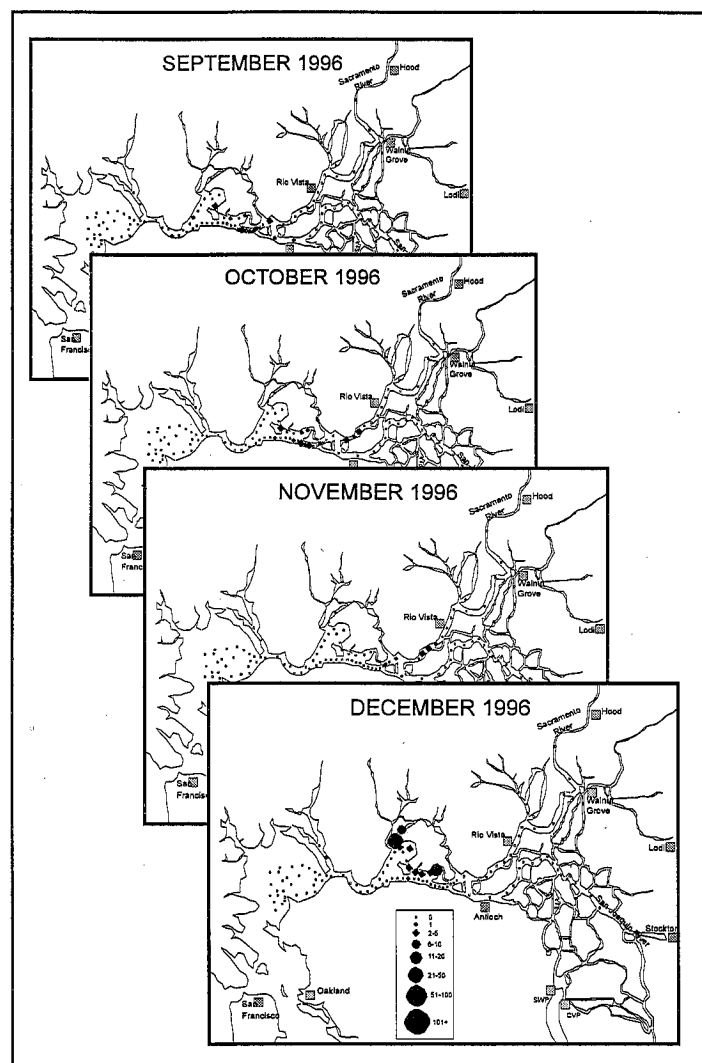


Figure 6  
DELTA SMLT CATCH, 1996 FALL MIDWATER TRAWL SURVEY  
Circles represent total catch of delta smelt at 112 fixed sampling locations.

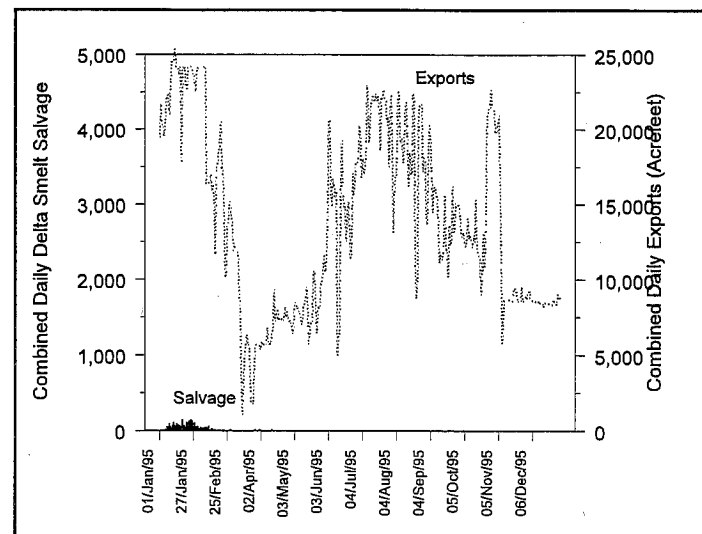


Figure 7  
DELTA SMLT SALVAGE AT THE CVP AND SWP IN 1995  
Bars represent combined daily salvage of delta smelt.  
Line represents combined daily exports in acre-feet.

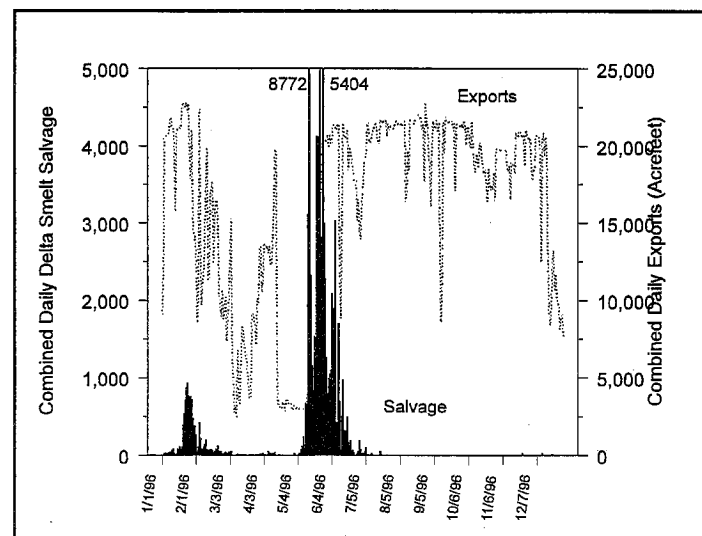


Figure 8  
DELTA SMLT SALVAGE AT THE CVP AND SWP IN 1996  
Bars represent combined daily salvage of delta smelt.  
Line represents combined daily exports in acre-feet.

The Central Valley Chinook Salmon Symposium, originally scheduled for May 13-14 at Bodega Marine Laboratory, has been rescheduled to October 22-23, 1997. It will still be at Bodega Marine Laboratory.

Details will be available in the Summer Newsletter.

## Splittail and Longfin Smelt Abundance

Randall Baxter

The fall midwater trawl splittail index for 1996 was well below that of 1995, but still the second highest since 1987 (Figure 1). About half of the 1996 index was made up of young-of-the-year. Last year was the first "wet" year in which no young-of-the-year splittail were collected by the otter trawl at Bay Study index stations (Figure 2), but five young-of-the-year splittail were collected at new, non-index delta stations. These surveys indicate some recruitment of young-of-the-year in 1996, but not a lot for a wet year.

Longfin smelt indices for 1996 were low relative to 1995, but represent a substantial increase in abundance for the even-year cohort (Figures 3 and 4). Longfin smelt spawn at about their second birthday, so the 1996 young-of-the-

year are progeny of the small 1994 year-class. The fall midwater trawl index, as sometimes happens, was composed almost entirely of a single month's catch (December index 1309; total 1356). This "late" index often results when maturing individuals of a strong year-class initiate their spawning run and younger fish follow them upstream. In December 1996, length-frequency data confirmed that slightly more than half the catch was composed of maturing, 1995 year-class fish (and possibly some 1994 year-class fish); the rest were 1996 young-of-the-year. The 1996 indices are comparable to those in 1993; thus, the even-year cohort is now large enough to produce a reproductive response comparable to that of 1995 if outflow conditions are good in winter 1998.

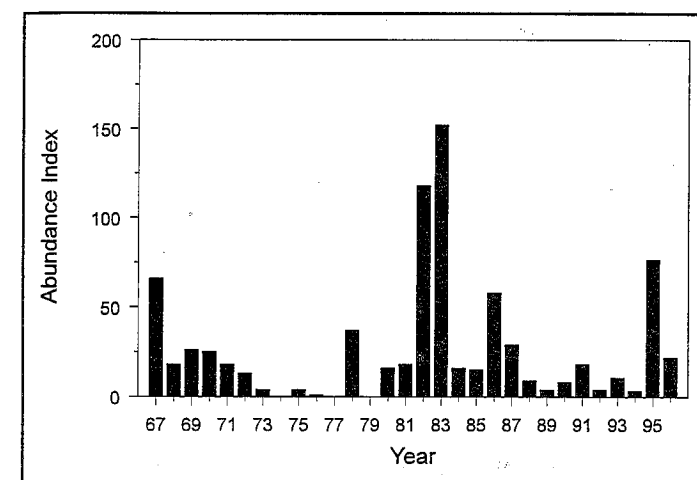


Figure 1  
SPLITTAIL ABUNDANCE INDEX  
BASED ON THE FALL MIDWATER TRAWL  
Index includes all age groups. No sampling in 1974 or 1979.

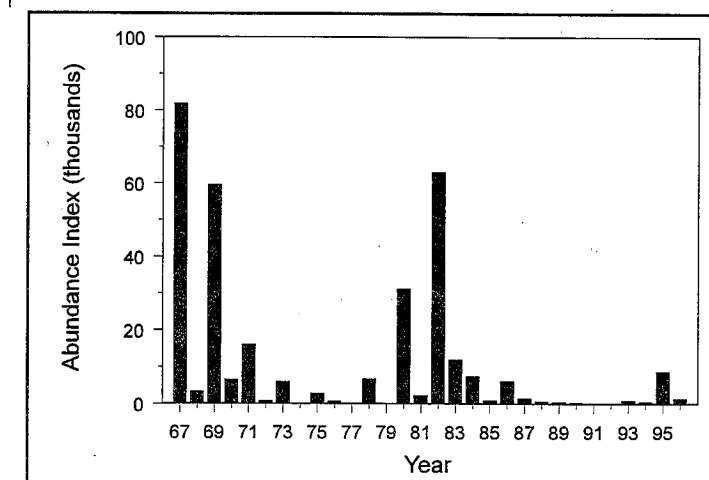


Figure 3  
LONGFIN SMLT ABUNDANCE INDEX BASED ON THE FALL  
MIDWATER TRAWL  
Index includes all age groups. No sampling in 1974 or 1979.

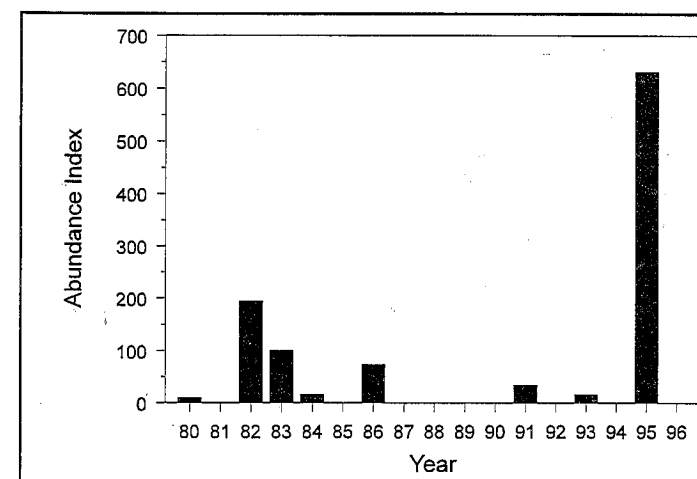


Figure 2  
SPLITTAIL YOUNG-OF-THE-YEAR ABUNDANCE INDEX  
BASED ON THE BAY STUDY OTTER TRAWL

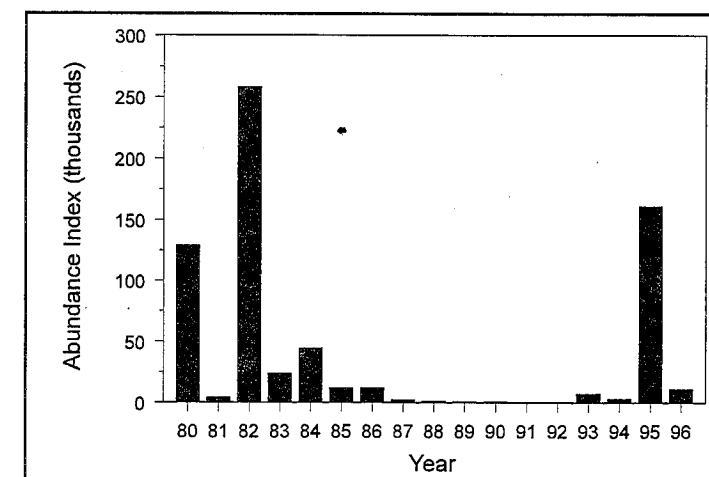


Figure 4  
LONGFIN SMLT YOUNG-OF-THE-YEAR INDEX  
BASED ON THE BAY STUDY OTTER TRAWL